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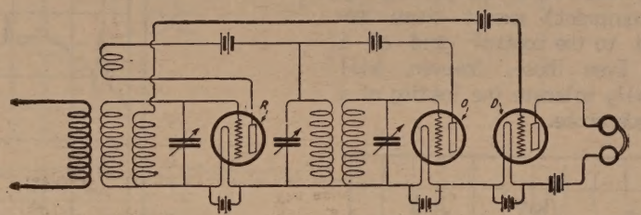
THE HORN SPEAKER

Season's Greetings

Radio News for August, 1922

The Armstrong Super-Regenerative Circuit

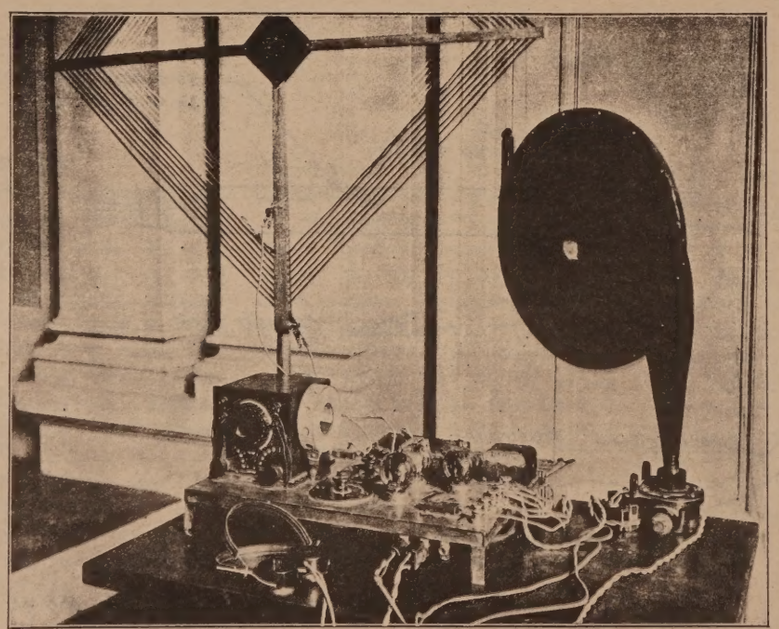
AT the meeting of the Institute of Radio Engineers, June 7, a new receiving circuit of great importance was outlined by its inventor, Mr. E. H. Armstrong, who is already famous for his contributions to the art of radio. The regenerative circuit and the super-heterodyne were the two earlier circuits, each of vast importance, which brought fame to their inventor. The new circuit is known as the "super-regenerative" and a successful demonstration was given of the practical application of the theories presented in the paper read by Mr. Armstrong. Using a loop aerial and only three tubes, speech and music from the broadcasting station at Newark, New Jersey, were received and amplified sufficiently loud to fill the large meeting room of the Institute. Mr. Armstrong explained, incidentally, that the building was almost radio-proof so far as reception by means of a loop was concerned.



This circuit is most efficient for the reception of modulated C. W. and Spark Signals so that they are heard with their true tones. As may be noted, a separate detector tube is used

The advantages of the super-regenerative circuit are numerous, and it seems as though it may provide the solution of many of the existing problems in the reception of radio telephony. The amplification is so enormous by this new system that the signal strength obtainable with two tubes is equal to that obtained with four or five tubes by existing methods.

Another remarkable feature of the circuit is that it can be adapted for the reception of telephony to the exclusion of spark signals. This is an entirely new departure and its advantage is evident. At present, even the most selective receiver cannot entirely eliminate spark interference if the spark station is transmitting on nearly the same wave-length as the radio telephone station it is desired to receive. In some cases, improperly tuned spark transmitters interfere over a broad band of wave-lengths. The super-regenerator adapted for the receiving of telephony does not receive these spark stations. In demonstrating this feature, Mr. Armstrong explained that incoming spark signals set up free oscillations in the ordinary regenerative circuit and the greater part of the energy is contained in these. The free oscillations are not permitted to build up in the super-regenerative circuit. By means of a special heterodyne system, the resistance of the receiving circuit is made alternately positive and negative at a definite frequency. If the super-regenerative circuit becomes popular, spark coil enthusiasts may fill the air with CQ's without a protest so far as the radiophone listeners are concerned.



The Super-Regenerative Set Used by Major E. H. Armstrong at the Institute of Radio Engineers, for the Demonstration of the Wonderful Amplification Obtainable With the New Circuit. The Third Tube on the Right Acts as Audio Frequency Amplifier to Operate the Loud Talker.

Hitherto, amplification of the high frequencies of short waves has been extremely difficult, but these high frequencies present no obstacle to the super-regenerative circuit. The amplification obtainable is as great as that obtainable on longer waves and it is handled with equal facility; in fact, the reproduction of speech is much better on the short waves than on the long waves as there is a tendency toward chopping effect on the lower frequencies of the longer waves.

In common with Mr. Armstrong's other inventions, the super-regenerative circuit undoubtedly provides a means of amplification of short waves to a degree which has hitherto been impossible except by the use of eight or nine tubes. This practically means that the same degree of amplification of short waves, at present attained with a super-heterodyne, may possibly be reached with the super-regenerative circuit using only two or three tubes. The new circuit, however, is superior to the super-heterodyne, as it can amplify, with no difficulty, much higher frequencies than any other method. Already wave-lengths of about 50 meters have been successfully handled and there is nothing to prevent the amplification of even shorter waves. This feature, in itself, opens up an entirely new field. At the present time, very little transmission or reception is effected below 150 meters, as it has been impossible to efficiently amplify such high frequencies. The super-regenerative circuit, however, may make it possible to utilize the unused zone below 150 meters. If this is accomplished, interference between stations will be almost an impossibility, as a difference in wave-length of one or two meters would represent a difference in frequency which could only be obtained by a large variation in wave-length at the lower frequencies of longer waves.

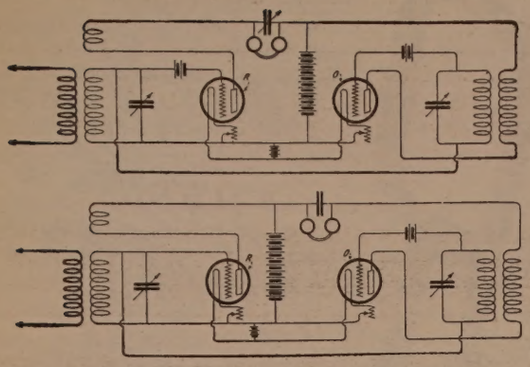
The only apparent disadvantage of the new system is the difficulty in tuning and, unless this can be improved, it may prevent its use by those unfamiliar with the operation of receiving apparatus. There are very few controls, but each one gives the impression that 17 separate heterodynes with as many harmonics are being used in the circuit.

The circuit, however, is a new method of reception. Extraordinary results have been obtained and it only remains to simplify the tuning and stabilize the circuit to make it of practical use to everyone.

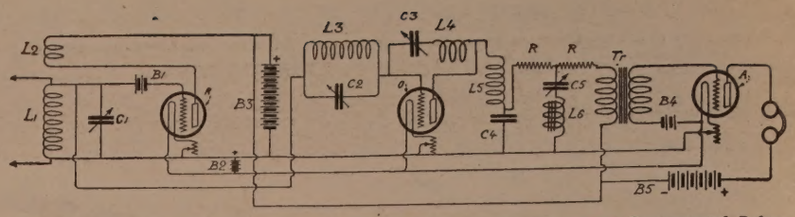
JUST before going to press, we were able to obtain the circuit shown above which was used by Major Armstrong in his demonstration of the super-regenerative receiver before the Radio Club of America at Columbia University. The coil L1, which is the primary of a short wave variocoupler, may be connected in series with the loop or in parallel, as shown. The secondary coil of the variocoupler L2 should be rewound with finer wire with about 90 turns. The grid battery of the first tube is variable from two to six volts and its value is best found by practice. The two duo-lateral coils in the grid and plate circuits of the second tube are not in inductive relation to each other. Any air core choke coil providing an inductance of five millhenries may be used for the coil L4.

C4, R, R, C5 and L6 form the filter circuit. R, R may be layrite resistances or choke coils shunted by condensers may be substituted for them. The object of this filter circuit is to prevent the intermediate frequency produced by the oscillating tube from paralyzing the audio frequency amplifying tube. This filter circuit is therefore necessary when using audio frequency amplification with the super-regenerative circuit. More than one stage of audio frequency amplification is unnecessary as loud signals are obtained by the single stage. In this circuit the third tube is used to amplify at audio frequency. Two tubes alone may be used if desired and, in this case, the telephone should be connected in the position occupied by the primary of the audio frequency transformer. One side of the telephones should be connected to the positive of B3, as shown, while the other side of the telephones should be connected directly to L5, as the filter circuit is then not required.

See page 2 for more of this historical article, which was written in 1922.



These two circuits are suitable for the reception of telephony. Either tube may be used as rectifier by adjusting the grid potential. The circuit above has been tried and has given excellent results. The characteristics were as follows: secondary L80 honeycomb, tickler L75 or L100, secondary condenser .001MF., grid battery 9 volts, "B" battery 160 volts. Grid battery for "O" 8 to 10 volts, grid coil honeycomb L1,500, plate coil L1,250, the grid coil being shunted by a .002MF. variable condenser. No phone condenser was necessary, the capacity of the cord being sufficient.



The Circuit Used by Major Armstrong in His Super-Regenerative Receiver as Demonstrated Before the Radio Club of America. The Constants are as Follows:
L1, L2, Variocoupler; C1, .001 M.F.; B1, 2 to 6 Volts; B2. 6 Volts; B3, 90 Volts; L3, 1250 D. L.; C2, .0025 M.F.; L4, 5 Milhenries; L5, 1500 D.L.; C3, .001 M.F.; C4, .006 M.F.; C5, .005 M.F.; R, R, 12,000 Ohms Each; L6, .1 Henry; Tr., Audio Frequency Amplifying Transformer; B4, 22½ Volts; B5, 200 Volts.

THE OSCILLOSCOPE.

Following is the remaining part of Durell Roth's article about oscilloscopes.

*** AF MEASUREMENT

Audio frequencies range from approximately 50 cps to 25,000 cps and are observed on your scope using sweep speeds from 5 ms/ division to 10 microseconds/ division. Signals from power transformers and audio frequency generators will generally be sine waves. Figure 4e illustrates a waveform that is similar to those observed in the audio section of a correctly operating radio that has been tuned to a broadcast station. The waveforms of figure 4f are typical audio signals with excessive noise possibly caused by bad connections or defective components in the receiver.

*** SCOPE PROBES

The previous experiments can be done with almost any kind of wire or cable connecting the various pieces of equipment; however, when you are trouble- shooting a set a more sophisticated probing device is necessary. In general, the best kind of probe to use is the commercially made unit known as a 10X probe. That simply means that the complete assembly divides the input signal level by ten before applying it to the scope. This type of probe is most desirable because it will not load the circuit under test. Circuit loading causes errors in amplitude readings and may actually cause a circuit to malfunction during the time it is being tested. If you have a commercially made 10X or even a 1X probe use it. Many scopes, however, are found without probes of any kind and the homemade, IX, assembly of figure 5 will work very well when servicing vintage radio equipment. All circuits in vintage radios are relatively insensitive (to loading by test equipment) except those attached to the control grid of a tube. Even those, however, will generally tolerate the loading of a homemade probe.

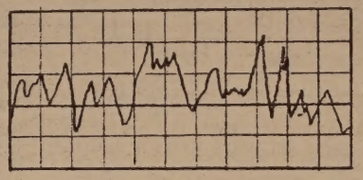


FIGURE 4e

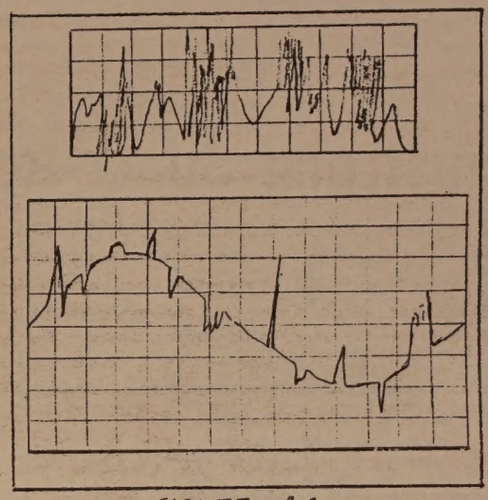


FIGURE 4f

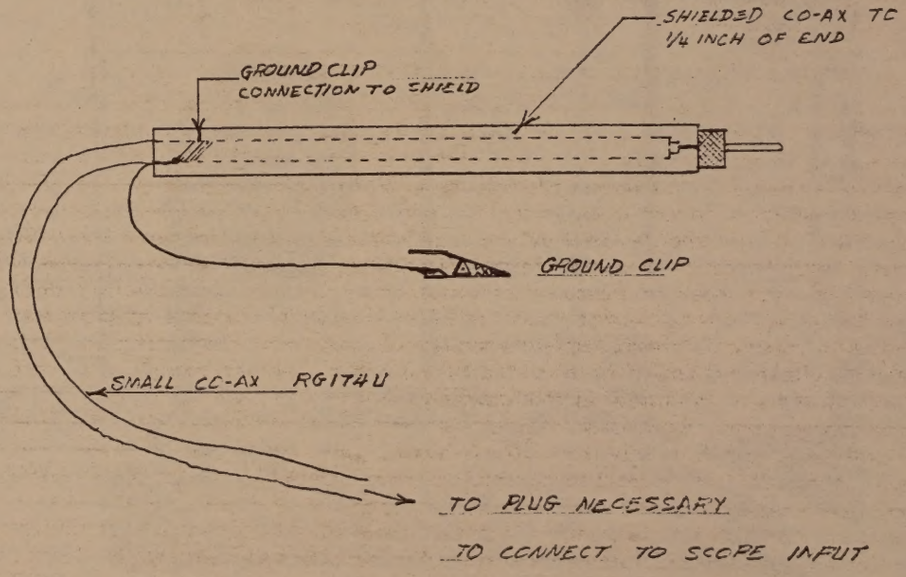

SHIELDED CO-AX TO 1/4 INCH OF END
GROUND CLIP CONNECTION TO SHIELD
GROUND CLIP
SMALL CO-AX RG174U
TO PLUG NECESSARY TO CONNECT TO SCOPE INPUT

FIGURE 5

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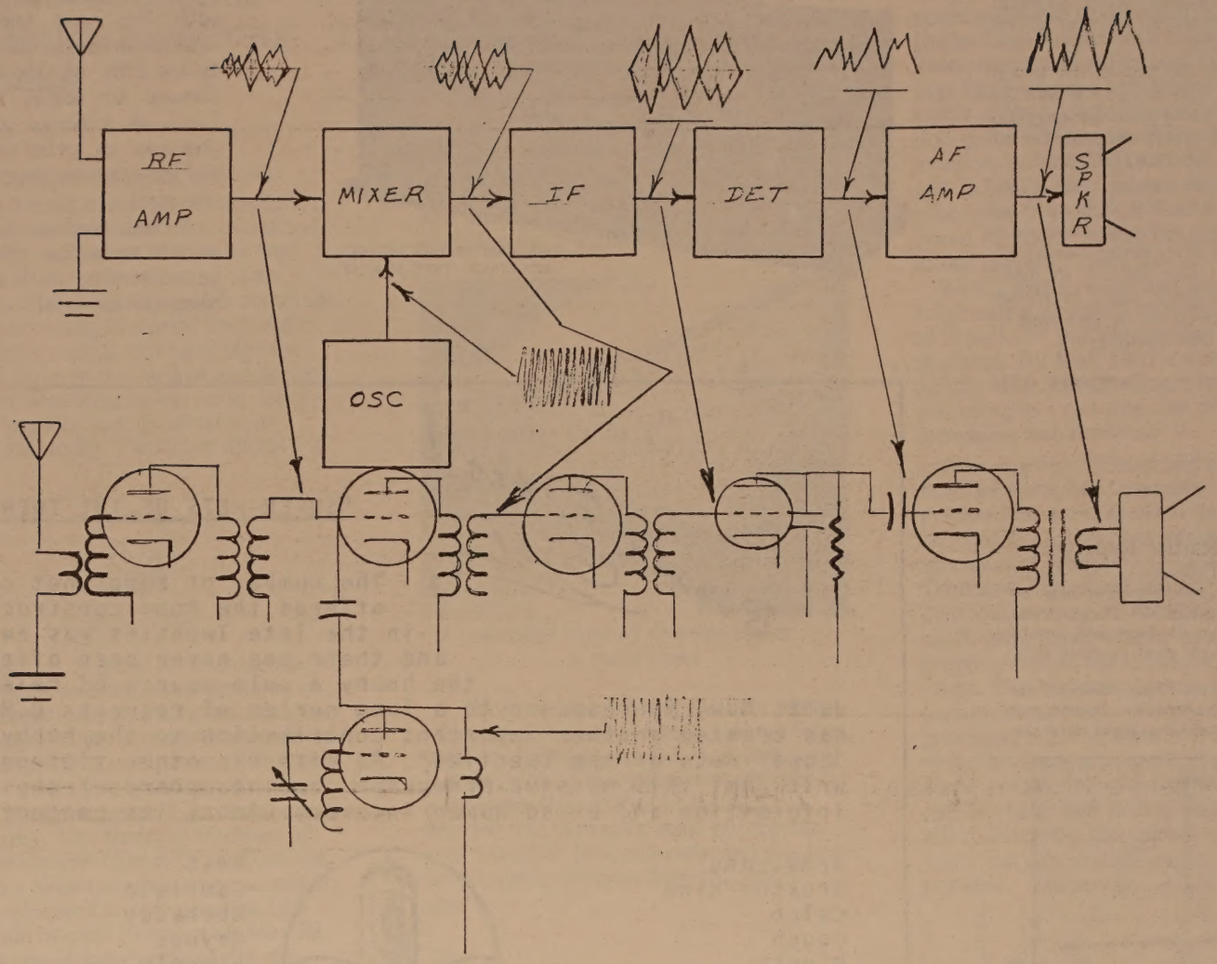


FIGURE 6

*** USING YOUR SCOPE

The previous experiments were designed to help you become familar with operating your scope and interpreting the displays of different kinds of signals. Although these signals were similar to those in a radio, there is no substitute for the real thing. Once the experiments are understood, I suggest that you observe the actual signals in a correctly operating receiver. Having become familar with the "real" signals in a correctly operating set, you will be able to quickly recognize the signal from a malfunctioning stage.

Figure 6 is a simplified block and schematic diagram of a superhetrodyne radio with waveforms that are typical of those in a correctly operating receiver. Before using the scope to troubleshoot a radio, I suggest that you observe the points indicated in the illustration. Adjusting the radio and scope will help you become familiar with interpreting the display when working with real signals.

The diagram in figure 6 indicates a modulation envelope at the output of the rf amplifier and mixer stages. The signal at these points may be too small to be observed on some scopes, however, the points should be checked anyway just so you will be familiar with the display your scope produces at the output of these stages.

Because of the nature of the "real" signals in a radio, it may be necessary to adjust the trigger controls of your scope in order to make the display appear to "stand still." The type of adjustment necessary depends on your equipment and may cause an unfamiliar flickering of the display or the display may disappear with a change in signal level. These are all normal characteristics of using the scope in a specific way. By adjusting sweep rate, trigger level or stability, etc. you will be able to obtain a combination of settings that provides a satisfactory display.

If the set you are using is a TRF, remember, there is no mixer, oscillator or IF amplifier in this type of receiver. The envelope and audio waveforms will be the same as the superhet except that all amplication is done at the carrier frequency of the station rather than in a IF amplifier.

When troubleshooting a defective radio, you may want to use your signal generator as a signal source for the set rather than a broadcast station just to have complete control over signal levels. In either case, having become familiar with your equipment and the kinds of signals that are expected at different parts of a set, you will be more efficient in tracing a signal through a receiver and locating the point where the signal disappears or is modified by the defective stage.

The more you use your scope for troubleshooting, the quicker you will be able to adjust the controls for the desired display. Soon your scope will be as easy to use and will give more meaningful results than your old VOM.

Tube "Bootleggers" Arrested

WITH the arrest in Philadelphia of the alleged leader of a gang of "radio bootleggers," the attention of the police and public was again concentrated on an industry valued at many millions of dollars which has been built up around the counterfeiting of vacuum tubes and trade marks of the General Electric Company, Westinghouse Electric and Manufacturing Company and the Radio Corporation of America. According to John S. Harley, special investigator for the Radio Corporation, the Philadelphia arrest is regarded as the key in a situation involving six factories located in Newark and its immediate vicinity.

In order to obtain the necessary evidence against the manufacturers, detectives from New York and Phila-

delphia have been engaged along Philadelphia's radio row for several weeks. Close observations were kept at that point as well as in Newark, where all of the manufacturing activities took place.

According to the police, the arrest of Thomas F. Cairns, Jr., known as the "king" of radio tube bootleggers, will lead to the arrest of a number of other bootleg tube manufacturers.

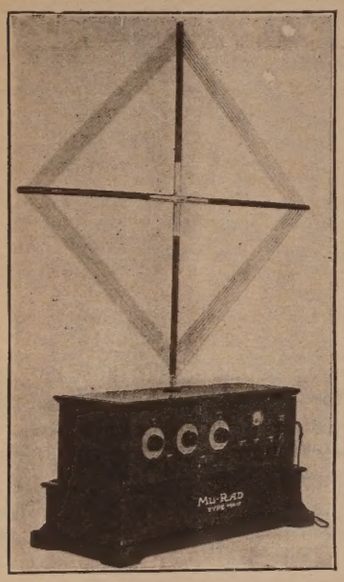
The life of the bootleg tube is extremely short, and, although many of them are sensitive at the beginning they lose their value after being burned for a few hours. The dealers in many cases have lost large sums of money through the operation of this ring of radio vacuum tube bootleggers.

DECEMBER, 1923

An Ideal Radio Receiver

THE Mu-Rad Laboratories of Asbury Park, N. J., have designed a new receiver, known as Mu-Rad MA-17, which has sensitivity, selectivity, simplicity and ease of operation to satisfy the most exacting radio enthusiast.

One dial does all the tuning, covering the entire range of wave-lengths. Interference is eliminated and stations selected very easily with two other dials, which are entirely independent of the tuning dial and of each other. The powerful, close stations can be blocked out and far distant stations brought in clearly and distinctly.

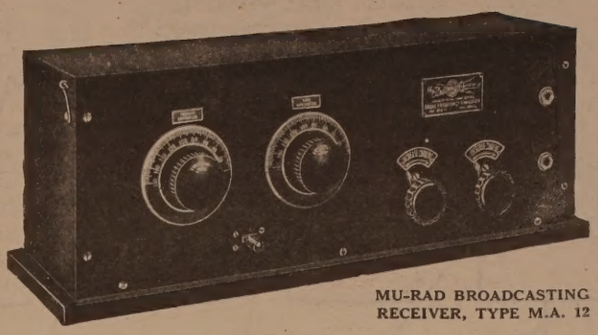


The simplicity of the circuit of the MA-17 makes filament adjustment seldom necessary. Rheostats are however, provided. As a further aid to selectivity and elimination of interference, the MA-17 has a two-foot loop aerial fitted into the top of the cabinet. The loop picks up only stations in its plane.

The Mu-Rad MA-17 circuit is a combination of radio and audio amplification to produce signals loud and clear enough to operate a loud speaker. A voltmeter in the panel provides an instantaneous reading of the "A" and "B" batteries.

The set is enclosed in a solid mahogany cabinet with an Adam Brown hand-rubbed finish. A compartment is provided in the base for "B" batteries, which are removable from the rear.

1923



MU-RAD BROADCASTING RECEIVER, TYPE M.A. 12

CLASSIFIED AD DEADLINE, DEC. 22TH

In order for the vintage radio collector to get in print with less wait time, THE HORN SPEAKER is moving the deadline time to the 22th of the month. We look forward to seeing more ads in T.H.S. We encourage you to send in your ads as often as you can and for you to encourage others to do the same.

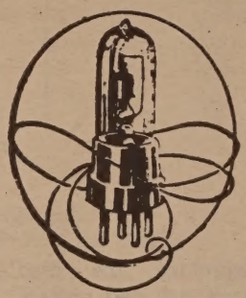
And, needless to say, we need you to encourage other collectors to subscribe, which will keep the newspaper doing well.

Beyond Rider!

"SUPER-HETS OF THE TWENTIES"

The number of super-het circuits offered the home-constructor in the late Twenties was awesome, and there has never been offered the hobby a sole-source of relevant data. Now, in response to a long series of requests D.H.MOORE has created another important contribution to the hobby - "Super-Hets of the Twenties". As with his other vintage radio writings, this massive Monograph combines scarce technical information and broad human interest. Among its contents are:

Armstrong
Braxton-King
Celco
Cough
Klentz
Madison-Moore
Mercury
Melo-Heald
Rauland
Robertson-Davis
Scott
Silver-Marshall
Tyrman
Ultradyne



Best
Camfield
Cockaday
Haynes
Lincoln
Magnaformer
Norden-Hauck
Quadraphase
Remler
Samson
Sargent-Rayment
St. James
Victoreen
Thompson

The fun of Radio is in doing it yourself

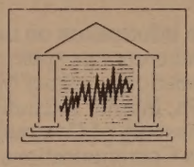
A rather large (200 pages) and lavishly illustrated Monograph is now ready for your further enjoyment of the hobby. A copy may be ordered from either of the addresses listed below, whichever is most convenient for you. The price is $25,ppd.

Olde Tyme Radio Company
2445 LYTTONSVILLE ROAD
SILVER SPRING, MARYLAND 20910

The Editorial Group, Ltd...
P.O. BOX 521 • PALO ALTO, CALIFORNIA

National Museum of Communications Reopens

Communications is our business. Whether we are involved in manufacturing, servicing or using communications equipment, each of us is in some way involved with communicating to an audience. The means by which communications are managed started back with rudimentary sounds and hand signals, evolving through the spoken and printed word, wireless telegraphy, radio, television, computers, and on to satellite systems and today's world of digital 1's and 0's.

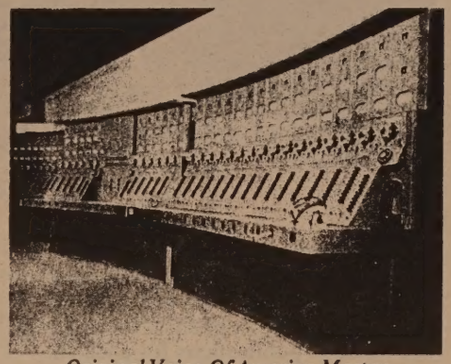


Wouldn't it be great if we could recreate events and historic milestones in that communications evolution...to see or hear things as they actually happened, and use the actual equipment of the era? Well, we can! The broadcast community, and the public in general now have that opportunity. The National Museum of Communications (formerly the National Broadcast Museum) has been completely rebuilt, relocated to new quarters and once again opened its doors on May 22. Perhaps you already knew of the museum, perhaps not. We're here to give you a little background on the museum's history to date and what it has to offer the broadcast community.

The museum's artifact collection started with Bill Bragg, an engineer for 20 years with KDFW-TV in Dallas, and a true aficionado of broadcast history. His interest in broadcast communications artifacts stems back to grade school. Bill continued to collect bits and pieces of history throughout school and on into adulthood. Much of the material he collected came from small private sales and from what local radio and television facilities were disposing of as technology moved forward. Few of the broadcasters were interested in storing old machines, so they were only too happy to make "donations."

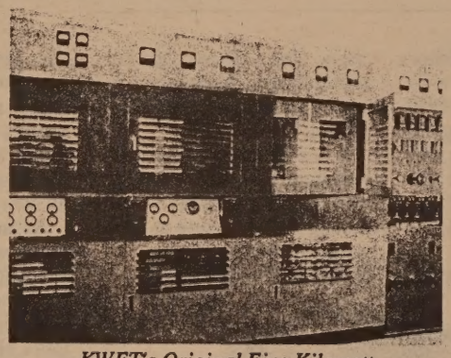
Eventually, Bill's collection grew too large to remain at home. Despite continuing support, moving several antique phonographs into the kitchen brought home to Bill and his wife the need for finding a more appropriate repository. Besides, they began thinking that there must be more people interested in such things, and why should their group of friends be the only ones to enjoy these historical pieces?

With the support of family and friends, Bill founded the Texas Broadcast Museum in 1979. The cost was $25 for the incorporation documents, plus packing and moving expenses. He started with 41 pieces from his collection which were deemed museum-quality. Located in rented office space in downtown Dallas, the museum was initially dedicated to showcasing items related to Texas broadcasting history. A Board of Trustees was formed from Dallas-area business and media professionals, providing direction for growth.



Original Voice Of America Master Control Panel

Word of mouth being the best advertisement, visitors and acquaintances from outside of Texas soon began contributing memorabilia of their own. Bill and his ever-increasing staff of volunteers decided that perhaps a more appropriate goal would be to accumulate and display broadcasting artifacts from the entire nation.



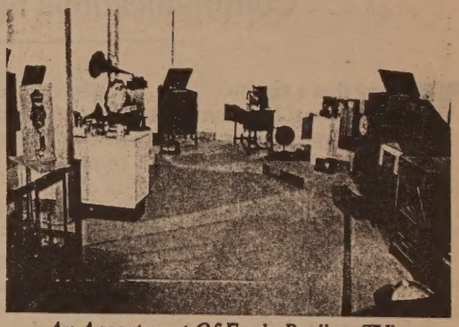
KWFT's Original Five Kilowatt RCA Transmitter

So, the museums's name and charter changed, becoming the National Broadcast Museum. With this increase in scope, and as more people became aware of the museum, contributions of various equipment, records, films and other artifacts increased proportionately. Due to the renovation of theWest End Historical District in downtown Dallas, it became impossible to renew the museum's lease. On December 2, 1983, the doors closed.

Moving took 30 days, 24 van loads and $10,000 to put everything into storage. Finding a site for relocation began to look hopeless, but a bit of luck came the museum's way. Trammel S. Crow Jr., a Texas real estate developer (and thankfully a museum trustee), graciously made space available in the newly constructed Dallas Communications Complex. This complex of office and studio buildings has become a hub of activity for much of the film and television production in the Southwest. Films shot on location include "Silkwood," "Streamers," and "ROBOCOP." Located just down the pike from Dallas/ Fort Worth International Airport, "it was the perfect answer to our prayers," said Bill.

With a home found and the future brightening, the staff embarked down the twin paths of fundraising and facility construction. By May 1987 a new three-story facility with 21,000 square feet of space was complete and step one of the transformation was finished.

Planning for exhibits and interior space went forward, but it became increasingly evident that the collection had grown to encompass materials spanning the whole spectrum of communications history. Therefore, museum staff and the Board of Trustees once again decided a change in name and charter was in order to more properly reflect the museum's size and scope. The National Museum of Communications was born, dedicated to providing a living legacy of the written, verbal and visual history of modern communications, and designed for the casual visitor and broadcast historian alike. Planning has included use of as many fully functional artifact exhibits as possible. Visitors are able to operate



An Assortment Of Early Radios, TV's And Phonographs

firsthand the many forms of modern communications.

Artifacts range from a 16th century scroll to an early Linotype machine; from a 1900s spark-gap transmitter to a full-size contemporary station transmitter; and from a videotape machine of the type used by CBS for their first evening news broadcasts in 1956 to the lapel microphone worn by Walter Cronkite when he signed off with "and that's the way it is..." for the last time.

Special features of the museum include individual listening and viewing booths capable of accessing different audio/ video channels. In the center of the museum is the Chilton Theater, a studio

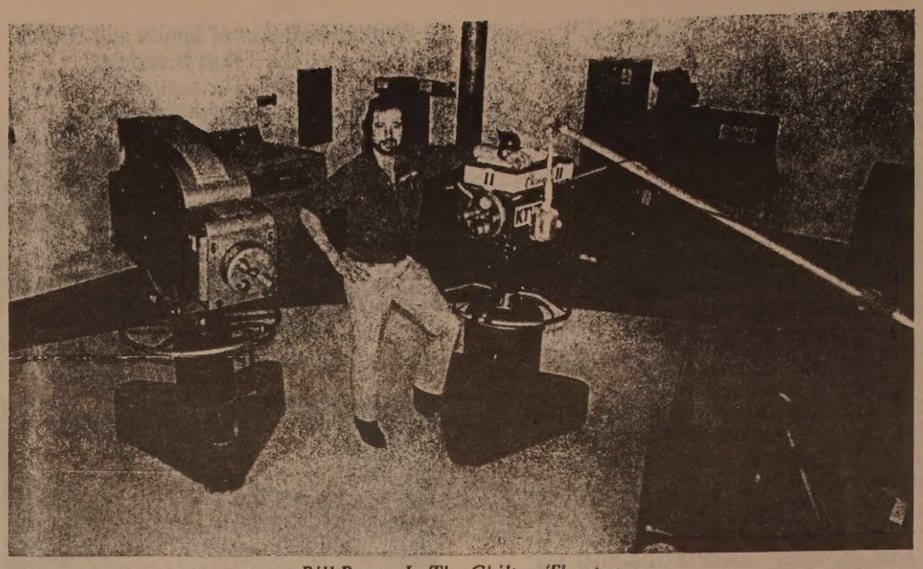
forum for light and sound shows, live presentations, and interactive seminars. Visitors are greeted by the 1938 vintage master control console from clear channel WOAI Radio in San Antonio, Texas, restored to mint condition, just waiting for the touch of those who have always wanted to be a real "DJ for a day." There are working Western Union teletype machines and a giant RCA five Kilowatt transmitter that once put KWFT-AM Radio in Wichita Falls, Texas on the air.

Down the hallway are dozens of antique telephones, a complete1900s switchboard, Edison phonographs, Atwater-Kent radios, Halicrafters televisions and more. There's even a restored 1930 Ford Model "A" delivery van once used to transport motion picture equipment. Also, "we are extremely honored to have the master control console from the Voice of America's Washington, D.C. offices" says Bill, "and don't forget to mention Edison's personal microscope and Bill Haley's guitar!"

The museum has a small engineering shop used for refurbishing and refitting artifacts in need of repair. On the mezzanine, an extensive library of film, tapes and documents has been created. Access to this material is normally limited to students and researchers.

Officially, the museum reopened on Sunday, May 22. Tickets are $2 for adults (1/2 price for seniors) and $1 for children under 12. Hours are 10 a.m. to 4 p.m. Tuesday through Sunday. The museum is still in need of monetary and material donations (fully tax deductible). Keep an eye on trade publications for updates.

If this article has sounded a bit like an ad for the museum, it's because we think the National Museum of Communications is worth your time and involvement. This is a part of our industry's heritage and a visit we think you'll truly enjoy. We're proud to have the chance to tell our customers of such an opportunity.



Bill Bragg In The Chilton Theater

For more information on the museum, personal and corporate sponsorships, or material donations, contact Mr. Thomas R. McCartin, Interim Executive Director, National Museum of Communications, Four Dallas Communications Complex, Lock Box 55, 6305 N. O'Connor, Suite 123, Irving, Texas 75039. Bill Bragg is available at 2001 Plymouth Rock, Richardson, Texas 75081. (Answering machine: (214) 690-3636.)

Thanks to Bruce Helling for giving permission to reprint the above article from "Sound Advice," which is published by International Tapetronics.

Communications museum makes history loud and clear

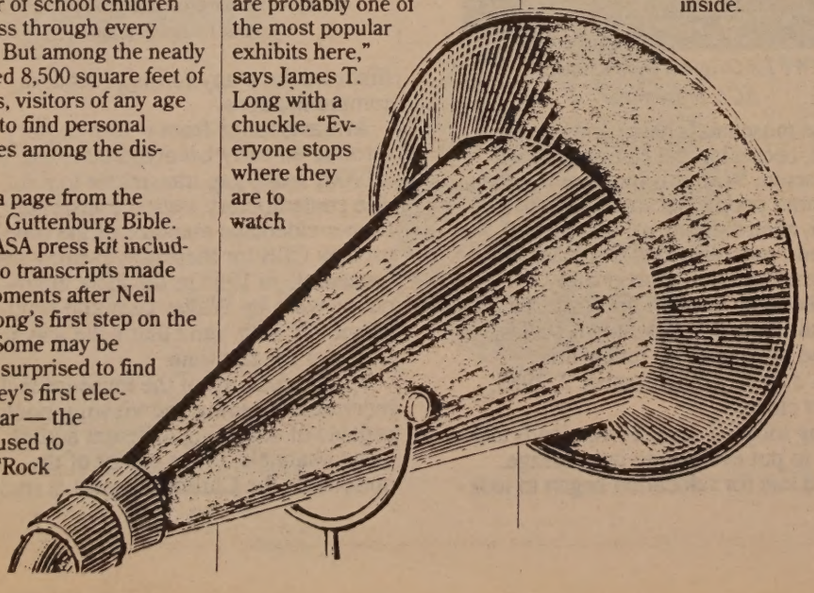
To say that a visit to the National Museum of Communications is like a walk through time doesn't quite do enough to convey the fact that it's also a lot of fun.

The museum definitely serves an educational purpose — as indicated by the number of school children who pass through every month. But among the neatly arranged 8,500 square feet of exhibits, visitors of any age are apt to find personal treasures among the displays.

Like a page from the original Guttenburg Bible. Or a NASA press kit including radio transcripts made only moments after Neil Armstrong's first step on the moon. Some may be happily surprised to find Bill Haley's first electric guitar — the one he used to record "Rock Around the Clock."

For many museum visitors the icing on the cake is a television playing circa 1950-60s commercials touting the joys of consumer goods like Hoola Hoops, the Edsel and Hai Karate aftershave ("So effective we've included a self defense manual!")

"Oh yea, the commercials are probably one of the most popular exhibits here," says James T. Long with a chuckle. "Everyone stops where they are to watch them. One of these days I'm going to have to sit down and watch them from beginning to end."



It is a Saturday afternoon and James — who is the museum's operations manager — is acting as tour guide for the increasing trickle of people coming inside.

"We get all kinds of people in here from all walks of life," James says as he points out entries in the visitor's registration book from Mexico, South Carolina and all over the southwest.

As an Irving attraction, the National Museum of Communications is not as well-known as the Cowboy Stadium or the "Mustangs of Las Colinas" sculpture. Not yet, anyway.

Since moving from downtown Dallas to its new location at the Dallas Communications Complex in May, the museum draws about 500 people a month. About a quarter of the visitors have come as a result of the more than 50 tours the museum booked between May and July.

"We're thinking of all sorts of ways to promote the museum," James says. "Right now a lot of people visit the Dallas Communications Complex expecting something like Universal Studios, and in reality we're the only honest tourist-type place here. But we've never had anyone say they didn't truly enjoy themselves."

(For more see page 8.)

The museum is the brainchild of 20-year KDFW-TV engineer Bill Bragg, who began his collection of communications memorabilia with a telegraph sounder that he presented at his third-grade show-and-tell.

In the years that followed, Bragg held private showings of his growing collection in his home until opening his first museum in the Dallas West End in 1981. Today, this museum is considered a unique collection where visitors can see and touch many facets of communications: television, radio, satellite technology, printing, music and graphic arts.

While museums in Chicago and New York also explore communications, the Irving museum uniquely combines its collection of "software" — radio and TV broadcasts — with the bulky,

THE YESTERDAY USA SATELLITE SUPERSTATION

SATCOM 4/TRANSPONDER 15/AUDIO SUB-CARRIER 6.2

Old Time Radio Shows
Public Domain Programs
24 Hours A Day

FREE TO EVERYONE
Vintage Music
No Commercials

BILL BRAGG, "the man with a million friends" is back on the satellite again, for the 4th year in a row! BIG BIRD is back too, Bragg's fine feathered helper who works for peanuts. Big Bird is a parrot, and according to Bragg, "he talks better than me". YESTERDAY USA has access to the world's largest collection of old radio shows and vintage music, so no matter what you like, you will hear your favorite programs or music WITHOUT re-runs!! If you can sing a song, play a musical instrument (even a comb or jug), or tell a clean joke; then you can be THE STAR OF THE SHOW! "If you are going to audition on the radio, you may as well do it coast-to-coast", says Bragg. Auditions should be on cassette tape and mailed to the Big Bird, who has the final chirp as to who gets on the air. Want to send out a message to the world?? Just call THE HOWDY HOT LINE, wait for the beep, then leave your message. 12 of the world's greatest DJs round out the staff, and all material is public domain.

"I am glad to have the opportunity to preserve and present radio broadcasting as it was during the 1930's and 40's" says Bragg, who is also the founder of THE NATIONAL MUSEUM OF COMMUNICATIONS in Irving, TX. (near Dallas). The only purpose for THE YESTERDAY USA SUPERSTATION is to tell the world about the Museum and to solicit tax-deductible contributions to keep the doors open! "Nobody is getting rich here", says Bragg, who works full time as an engineer at KDFW-TV in Dallas.

YESTERDAY USA rides the audio sub-carrier of the nationally known home shopping network SHOP AT HOME, who donate uplinking and satellite time. For the largest selection of quality name-brand merchandise in America....."stay at home and SHOP AT HOME"! Shopping Centers are sometimes famous for "dings" on the parking lots and "high prices" on the malls, so Bragg reminds his listeners "DON'T GO TO DING CITY AND PAY DOUBLE!".

For FREE permission to use and/or re-broadcast YESTERDAY USA, please write or call the "howdy hotline" today! Send cassette audition tapes to The Big Bird.

YESTERDAY USA
% Bill Bragg or Big Bird
2001 Plymouth Rock
Richardson, TX. 75081 USA
(214) 690-3636 Howdy Hot Line

HOW TO USE THE PROGRAM SCHEDULE

This is only a TEMPORARY Program Schedule. Due to the limitations of our present equipment, it is not possible to rotate the DAY TIME SHOWS (6:00 AM to 6:00 PM) or the NIGHT TIME SHOWS on Sunday Nights. New equipment will soon be installed, allowing us to rotate ALL Shows on a daily basis. Listen to THE BILL BRAGG SHOW (TAPE #A) for information regarding the installation of the new equipment, and publication of a permanent Program Schedule.

PROGRAM TITLES: It is not possible to publish titles of the public domain old time radio programs. YESTERDAY USA makes an honest and sincere effort to only air programs that are in the public domain! If we were to accidentally air a program that is NOT public domain, then the Program Schedule would be a record of our mistake; and could be used against us. Program titles and original air dates are announced at the biginning and end of each tape.

HOW TO USE THE SCHEDULE: 30 minute public domain old time radio programs are presented from 6:00 AM to 6:00 PM daily. Our DJs, who play public domain radio programs and/or vintage music, are on the air from 6:00 PM to 6:00 AM. Their air times rotate daily, except Sunday. All times are EASTERN STANDARD TIME, and each tape is 90 minutes long.

EXAMPLE: THE RANDY PERRY SHOW is a 30 minute program, and is the last item on TAPE #B. Therefore, Randy's Show is aired 60 minutes into TAPE #B, or after the 60 minute HERITAGE RADIO THEATRE. This means that Randy is heard at 11:30 P.M. Monday, 1:00 AM Wednesday, 2:30 AM Thursday, ect. For thoses who go to bed early, Randy is heard at 7:00 PM on Saturday and Sunday.

NOTE: The motors in our tape machines have only a 2% accuracy, so air times may vary plus or minus 4 minutes. Listen to THE BILL BRAGG SHOW (TAPE #A) for the latest news about THE NATIONAL MUSEUM OF COMMUNICATIONS and THE YESTERDAY USA SUPERSTATION.

OCTOBER 1988

YESTERDAY USA SATELLITE SUPERSTATION

SATCOM 4/TRANSPONDER 15/AUDIO SUB-CARRIER 6.2

TEMPORARY PROGRAM SCHEDULE

TIME	MON	TUE	WED	THR	FRI	SAT	SUN
6:00 AM	Various public domain old time radio shows, back-to-back without commercials until 6:00 PM. daily.						
6:00 PM	8	F	E	D	C	B	B
7:30 PM	9	8	F	E	D	C	C
9:00 PM	A	A	A	A	A	A	A
10:30 PM	B	9	8	F	E	D	D
	TUE	WED	THR	FRI	SAT	SUN	MON
12:00 AM	C	B	9	8	F	E	E
1:30 AM	D	C	B	9	8	F	F
3:00 AM	E	D	C	B	9	8	8
4:30 AM	F	E	D	C	B	9	9

NOTE: All times are EASTERN STANDARD TIME. Each tape is 90 minutes long and new tapes are loaded at 10:00 AM each Monday morning. The contents of each tape are listed below.

TAPE CONTENTS

TAPE #8	"WHEN RADIO WAS" 60 min. of old time radio shows & commentary from Chicago, with your host Carl Amari. "DR. JAZZ" Host Clark Mihelko plays the best in old time jazz music, from Fallbrook, CA.
TAPE #9	"THE OLD RADIO VAULT" Bashful Bob Burnham plays 90 min. of old radio shows & commentary.
TAPE #A	"BILL BRAGG SHOW" Program info., Museum news, the mail bag, star of the show & old radio shows.
TAPE #B	"HERITAGE RADIO THEATRE" From Boston, Tom Heathwood plays 60 min. of old radio shows. "RANDY PERRY SHOW" Handy Randy plays 30 min. of country & blue grass music.
TAPE #C	"THE LISTENING POST" Bob Proctor plays 60 min. of old time radio shows & commentary. "CHET'S POLKA PARADE" Chester Czerniak plays 30 min. of old time polka favorits from Arizona.
TAPE #D	"THIS IS RADIO" John & Larry, the Gassman twins, play 60 min. of old radio shows & commentary. "BIG JIM FROM BIG D" Uncle Jimmy Sarver, the man with a voice as big as Texas, plays 30 min. of old time country and western swing music.
TAPE #E	"CHEM TERRY SHOW" The ole "smoothie" is out of retirement and plays 60 min. of big band music. "OLD TIME RADIO" 30 min. of public domain programs.
TAPE #F	"THE LAUGH FILE" Julie Barrett, the strawberry blond, plays 30 min. of vintage comedy records. "OLD TIME RADIO" 30 min. of public domain programs. "ROCK N ROLL" Bud Buschardt plays 30 min. of oldies.

immense cameras and transmitters from which the broadcasts originated.

The museum also plans to increase its nationally acclaimed status by becoming a center for scholarly learning about communications.

"This is one of the things we're working on," James says as he shows a visitor the museum's second floor crammed with boxes and shelves. "We've got 32,000 phonograph records here, in addition to film, audio tapes, video, trade and hobby journals — all going back to the 1930s. Once it's all catalogued, we'll have an extensive reference library for research."

Thanking the visitors for coming by, James returns to his seat in the lobby as a young couple pushing a baby carriage enter.

"You know, modern children take things like color television and compact disks for granted," James says. "We want them to know the evolution behind those things. Our goal is to give them a sense of history when it comes to communications."

Amazing Music Machines
Antique Cylinder & Disc Phonographs
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Phone: (919) 492-0518

— MEMBER —
Michigan Antique Phonograph Society
California Antique Phonograph Society
Canadian Antique Phonograph Society
Vintage Radio and Phonograph Society

The National Museum of Communications is located at the Dallas Communications Complex. Operating hours are Tuesday through Sunday from 10 am to 4 pm. Admission is $2 for adults and $1 for children. Senior citizens admitted free of charge. For more information call (214) 556-1234. ■

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RADIO/TV/HAM/MISC.

YOUR SATISFACTION OR
YOUR $3.50 REFUNDED.

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4172 EAST AVE.,RD 2
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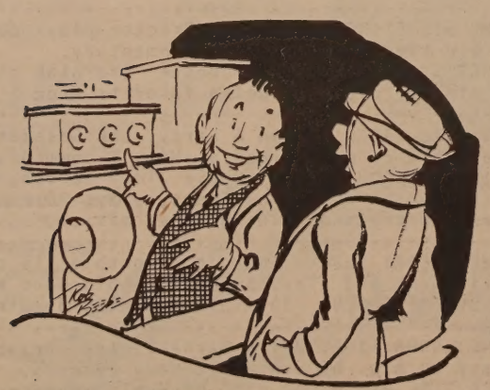

This mint condition radio was found at a garage sale with its original container for 50 cents.

flea market

AD SPACE:
Full page $50.00

Half page $25.00
Quarter page ...$12.50

Business size card ads $1.00
Space per square inch $0.60

CLASSIFIED ARE FREE UP TO 100 WORDS. Additional words are 5 cents each.

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FOR SALE — SCHEMATICS, BOOKS, ETC.

****

1938 CAPITOL RADIO ENGINEERING COURSE COMPLETE IN 8 BINDERS PLUS 19 ISSUES OF CREI NEWS BULLETINS. 1943-50 ALL MINT CONDITION $225 U.S. VIA UPS PREPAID, JACK,(604) 522-2418, 6758 BRYANT ST., BURNABY, B.C. V5E 1S8 CANADA

****

MAGAZINES— RADIO NEWS 1948 TO 1954 $2.50 EA. RADIO CRAFT 1939 TO 1944 $2.50 EA. RADIO CRAFT 1945 TO 1948 $2.50 EA. RADIO ELECTRONICS 1948 TO 1955 $2.00 EA. ALL PLUS SHIPPING. MIN ORDER'S $7.50. KRANTZ, 100 OSAGE AVE., SOMERDALE, NJ 08083.

****

FOR SALE OR TRADE= 1938 NATIONAL RADIO INSTITUTE RADIO COURSE: APPROXIMATELY 80 BOOKLETS IN TWO NRI BINDERS. 1938 NRI TEST ANSWERS IN NRI GREEN BINDER. 1938 RADIOTRICIANS SERVICE MANUAL IN BLACK BINDER. 1952 NRI RADIO COURSE IN NRI BINDER. ALL IN GOOD CONDITION. WISH TO TRADE AS PART PAYMENT ON ANY MANUFACTURED CRYSTAL RADIO, OR PARTS TO CRYSTAL RADIOS OR TWO CALIBRATED KNOBS 2 1/2" DIAMETER OR PHILCO ONE OR TWO TUBE 1938 SLANT FRONT KIT RADIO OR ANY SIMILAR ITEMS. RICHARD R. SPRATLEY, 2112 McLAIN STREET, CHESAPEAKE, VA 23324. PHONE (804) 545-2402.

****

THIS SERVICE MANUAL supplement contains a list of electrical values, resistors and condenser, coils and transformers in all Atwater Kent radios 1924-1933 inclusive $3.50 P.P. 24 pages. ****** THIS BULLETIN contains the complete list of Philco black bakelite "by pass" condensers, new universal types, discontinued types with replacements and condensers with internal resistors $1.50 P.P. — Lee Williams, 2015B 228TH S.E. Bothell, WA 98021.

****

FOR SALE— RIDERS MANUALS, ABRIDGED (VOL. 1-5) AND VOL. 6 THROUGH 16 $275.00. VOL. 9, 10, 14 $20.00 EACH. ANTIQUE RADIO SERVICE, O. H. McDONALD, 2535 WEDGLEA #124, DALLAS, TX 75211.

****

SCHEMATIC $1.25 each, give make and model number. New manuals of old tubes, substitution guide, characteristic, VT numbers and pin out guide, Tubes, books, and parts. Send SASE to Housel, 1816 S.W. 12, lincoln, NE 68522.

****

ELECTRONIC ORGAN SCHEMATICS AND MANUALS. SASE FOR PRICE QUOTES. MANY MAKES AND MODELS. ALTON H. BOWMAN, 4172 EAST AVENUE, RD 2, CANANDAIGUA, NY 14424.

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FOR SALE — GENERAL

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2 PHILCO CATH. 70 — 1 PHILCO TOMBSTONE, 37-89 — 1 PHILCO TOMBSTONE 60-B- — 1 AK MODEL 55 RED COVER AND SPEAKER. RUSSELL OR IRMA SCHOEN, E7340 NIETZKE ROAD, CLINTONVILLE, WI 54929. (715) 823-6744.

****

THESE ITEMS WILL MAKE FINE XMAS GIFTS. MARCONE - RCA - STOCK CERTIFICATE $32.00 — ACE RADIO OLD TIMER WITH HIS TEA KETTLE RADIOS, AND CATS IN COLOR SIZE 8" X 10" $22.00. WITH MAT $24.00. UNSOLD STOCK TUBE SETS WITH 029 CARTON FROM EARLY 1960 MADE IN U.S.A. GRANCO MODEL 604 FM. ADMIRAL Y 3443 AM. GE AM SET $27.50 EACH. HARD COVER SAGA OF THE VACUUM TUBE BOOK.FIRST EDITION 1977 $27.50. ALL PLUS POSTAGE OR U.P.S. — KRANTZ, 100 OSAGE AVE., SOMERDALE, NJ 08083.

****

MAJESTIC, model 25, ser.# 2B036224 Grigsby Grunow Co., radio on tall legs —— Western Auto Supply Company, model 929-48380, 50-60 cycle, 83 watts- console model- needs veneer work, lights up but doesn't play. has plug in for TV. G.E. tubes in chassis #001048. make offer. S. T. Mellas, Rt. 1 Box 119F, McNeal, AZ 85617.

****

LARGE MAHOGANY WALL TYPE TELEPHONE withshelf, magneto and bells. 30" high X 10" wide. Two carbon button mikes.. one double button and one single WESTERN ELECTRIC. Some blue Amberol cylinder records. Aeriola Senior radio, some plastics. R. Matson, RFD#1, Box 2943, Kennebunk, ME 04043. (207) 985-3751.

****

PHILCO CATHEDRAL MODEL 70, EXCELLENT, 01A TUBES, NEUTROWOUND BATTERY SET WITH SPEAKER, 2 OLD TELEPHONES. RUSSELL SCHOEN, E 7340 NIETZHE ROAD, CLINTONVILLE, WI 54929. (715) 823-6744.

****

RME 69 EARLY RECEIVER. rack mount, generally good, weak on 160 meter band $95; loose coupler, unusual replica $35; crystal grinding outfit $15; very early RCA/GE/Acme transmitter power supply transformer and choke (for Vu-202 & such) iron case $45; Polaroids $1.00@. All plus UPS. Paul C. Crum, W9LC, 6272 N. Cicero Avenue, Chicago, IL 60646. (312) 282-3033.

****

FOR SALE: NEW AND USED TUBES, Electrolytic capacitors, cone speakers. Send SASE for lists, C. Elmer Nelson, 11 S. Church Street, Princeton, IL 61356.

****

FOR SALE: ANTIQUE (1924 VINTAGE) ATWATER KENT BREADBOARD MODEL 10A IN ALMOST MINT CONDITION, WITH FIVE GOOD UX201A'S INCLUDING MODEL M HORN SPEAKER. WARRANTY AND INSPECTION TAGS ARE OK. $700.00 PLUS SHIPPING AND PACKING. PREFER NOT TO SHIP. WILL CONSIDER SELLING SET OR SPEAKER SEPARATELY. LEO GIBBS, W8BHT, 701 BROOKFIELD ROAD, KETTERING OH 45429. (513) 299-3965.

****

RIDERS #6 TO #14 $18.00 EACH. HOWARD SAMS IN BINDERS ASSD. YEARS $15.00 EACH. HAWKINS ELECT. GUIDES SET OF 10 BOOKS $30.00. HAVE SOME ASSD. TUBE TESTERS, SIGNAL GEN. FOR SALE 3" TO 5" SCOPES. 1— CARRY A STOCK OF NEW AND USED REPAIR PARTS, TUBES, VOL. CONTROLS, IF COILS, SPEAKER KNOBS, DIAL BULBS, DRIVE BELTS, BALLEST TUBES, 1,000'S OF UNLISTED RADIO PARTS. WRITE WANTS AND SASE. SHIPPING EXTRA ON ALL ITEMS, RADIO SALES AND SERVICE SINCE 1930. KRANTZ, 100 OSAGE AVENUE, SOMERDALE, NJ 08083

****

FOR SALE- New and used tubes, capacitors, cone speakers, have over 500 different types of tubes—used from 40 cents, new from 95 cents. Send SASE for lists, C. Elmer Nelson, 11 S. Church Street, Princeton, IL 61356.

****

STEWART WARNER model 305, Stewart Warner speaker, American Bosch model 360, Silvertone model 1386, Clarion Jr. 320 superhetrodyne, small mirror tone deluxe," ivory colored radio with red knobs, case only for a Kennedy cathedral. Send for new list. Clifforf Schoen, 549 Fulton St., Seymour, WI 54165. Phone (414) 833-2429.

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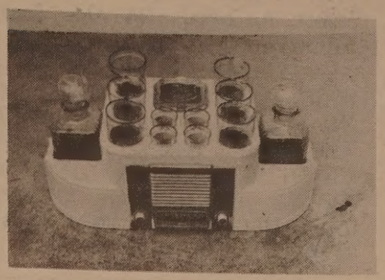

SELLING OUT. STEWART WARNER RADIO BAR $250.00 EMERSON BAKELITE RADIO $10.00 HALLICRAFTERS S52 $125.00 HALLICRAFTERS S82 $100.00 MAJESTIC CATHEDARAL $300.00 OTHERS — PHONOGRAPHS: EDISONS, GEM $275.00 FIRESIDE $475.00 EIGHT OTHERS. VICTOR III, M O, E, AND OTHERS. COLUMBIA BASE CYLINDER PHONOGRAPH BRASS HORN $275.00 EXTRA HORNS, RECORDS, REPRODUCERS, OLD TELEVISIONS: 7" MOTOROLA, 7" PHILCO, 3" PILOT, EXTRA CRTs, 14" RCA $35.00 SEVERAL OLD CLOCKS, GUNS AND OTHER ANTIQUES. CALL DAYS (503) 479-4282. CHARLES SEIDEL, GRANTS PASS, OR

****

FOR SALE: RADIOLA MODEL II 225.00, 11 pr. Newcomb headsets 2.00 pr., Junker Magnavox TRF model D 15.00, 1930's Zenith junker tombstone 10.00, model 3970 Philco battery tombstone 15.00, UZ-1325 horn only 10.00, table model 1950's Admiral electric radio with phonograph 10.00, model 10728A Philco Transitone 10.00, late 20's American Bosch electric set with 8 tubes 50.00, 1950's Studebaker car radio 20.00, 1940's Zenith push button electric radio (plays) 25.00, U.P.S. extra, Larry Chambers, 5026 Suter Drive, Nashville, TN 37211, AC (615) 833-2448.

****

FREE: Send 2-stamp LSASE for just released Flyer, NO. 188c to: Olde Tyme Radio Company, 2445 Lyttonsville Road, Silver Spring, MD 20910.

****

MANY THOUSANDS OF OLD TUBES. LARGE 80, 81, 82, 83 BOXES OF WESTERN ELECTRICS RECEIVING AND TRANSMITTING TUBES, PEANUT TUBES, METAL TUBES, E. H. SCOTT TUBES, BOXES OF LOCTALS AND OCTALS. IV TUBES. ALSO FIRST EDITION RIDERS SUBSTITUTION GUIDE BOOK. ONLY SELLING ALL U PICK UP. TUNGAR BULBS. TO: BASIL ABBOTT, #4 BUNKER HILL, RICHARDSON, TX 75080.

****

FOR SALE: to receive America's best list of radios, tvs, mags, etc.. send $1.50 for current list to: Jim Clark Enterprises, Dept.,HS, 1292 Starboard, Okemos, MI 48864.

****

FOR SALE. MUST SELL MOST OF MY HOBBY: RADIOS, CONSOLES, TEST EQUIPMENT, AMATEUR RADIO RECEIVERS, TRANSMITTERS, PARTS, TUBES AND MAGAZINES. PLEASE TELL ME WHAT YOU WANT— CAN SEND LIST OF YOUR REQUEST FOR SASE. R. W. OLMSTED, K4UJZ, 608 W. THOMPSON LANE, MURFREESBORO, TN 37129. (615) 893-5344.

****

SEND LARGE SASE for list of radios., Donald Juleen, 6252 Ledge Road, Sturgeon Bay, WI 54235.

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FOR SALE — PHILCO

****

PHILCO 95TH ANNIVERSARY limited edition cathedral radio, AM/FM transistor chassis, look a like to Philco model 90 - 1932- collector's item, only $89.91 plus $5.00 shipping. Maurer TV, 29 South 4th Street, Lebanon, PA 17042.

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FOR SALE — SCOTT

****

SCOTT ALLWAVE 12 IN NAPIER CONSOLE CABINET, GOOD UNRESTORED CONDITION, CABINET NEEDS MINOR VENEER REPAIR, TUBE COVERS AND COIL CANS NEED RECHROMED. TRADE FOR BEST OFFER OF 1940'S JUKEBOXES AND/OR PRE 1941 SLOT MACHINES. ALVIN HECKARD, RD1, BOX 88, LEWISTOWN, PA 17044.

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FOR SALE — TUBES, PARTS, ETC.

****

30 DAY SALE: New tubes in original cartons $2.00 each. 0Z4, 1AD2, 1BC2, 1R5, 2AV2, 3HQ5, 3Q4, 3S4, 4BZ6, 4BZ7, 5AM8, 5U8, 6AH4, 6AL5, 6AM4, 6AM8, 6AQ6, 6AS8, 6AW8, 6AY3, 6BC7, 6BF6, 6BJ8, 6BK5, 6BW8, 6CM7, 6CN7, 6CS7, 6CU5, 6CU8, 6CY7, 6DB5, 6DK6, 6EM5, 6FS5, 6GC5, 6HZ6, 6KZ8, 6U8, 6W6, 7AD7, 8AW8, 8CX8, 10EG7, 12A4, 12AB5, 12AL5, 12AT6, 12AT7, 12AV5, 12AV6, 12AZ7, 12C5/12CU5, 12D4, 12DB5, 12DT5, 12KS, 13DE7, 14E6, 14E7, 19AU4, 19J6, 35B5, 35W4, 35Z3, 50EH5, 5963, 5964. Add $2.40 shipping (Wisconsinites add 5%) Don Diers, 4276-S4 North 50th Street, Milwaukee, WI 53216-1313. Send $1.00 (refundable) for lists of tubes and stuff.

****

FOR SALE; NEW AND USED TUBES, CAPACITORS, CONE SPEAKER; SEND SASE FOR LISTS, C. ELMER, 11 S. CHURCH ST., PRINCETON, IL 61356

****

FOR SALE: GRILL CLOTH. New, custom-made material in diamond pattern. Good match for 1930's radios. $6.00 for 10" X 12" piece, postpaid. Send SASE for sample. Michael Katz, 200 East 30th Street, Apt. 8E, New york, NY 10016. (212) 725-0736.

****

TUBES ONE-V 6.00, 6V5/6G5-6E5 12.00,6L6M 17.00, 6L6 GC 10.00, 6 and 12 V 3 and 4 prong vibrators 12.50 all ppd. H. f. Brammell, 204 E. Maple, Americus, KS 66835.

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FOR SALE; NEW AND USED TUBES, capacitors, cone speakers, send SASE for lists, C. Elmer Nelson, 11 s. Church Street, Princeton, IL 61356.

****

FOR SALE: NEW IN ORIGINAL BOX, 215-A WESTINGHOUSE $30.00. ONE BRASSBASE UV-201-A TUBE EX. CONDITION POST PAID. $20.00 NO TIP USED. CLEON BOOTHE, BOX 235, COHOCTON, NY 14826.

****

LARGE STOCK OF TUBES FOR TV AND RADIOS 1940'S UP. NEW IN ORIGINAL BOXES. ALSO HAVE SOME TRANSMITTER TUBES. SASE FOR LIST. R. OLMSTED, 605 W. THOMPSON LANE, MURFREESBORO TN 37130. (615) 893-5344.

****

FOR SALE; UNUSED AND USED TUBES, cone speakers, electrolytic capacitors, phono cartridges and needles, send SASE for lists. C. Elmer Nelson, 11 S. Church Street, Princeton, Il 61356.

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TELEVISIONS

****

RCA CT-100 FIRST PRODUCTION COLOR TV set — beautifully restored cabinet and meticulously restored electronics with a great 15" color picture like 34 years ago (1954). An opportunity is now to own a unique electronic invention of the century. SASE and $1.00 for photo. Bill Russell, 3236 Laurel Canyon, Santa Barbara, CA 93105. (805) 682-8115. Accepting offers through March 1988 (min. bid $2,500 or $3,500 sold outright.)

****

RCA TV Model 8PT7010 in red metal case in working condition. Included second set same model for parts. Make offer. John Schellkopf, 1344 Goucher Street, Pacific Palisades, CA 90272.

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FOR SALE — ZENITH

****

THE CABINET IS IN MINT CONDITION and the radio plays. It is a Zenith 12 tube superhetrodyne with a tuning range 540-18400 kyc., chassis 1204-A. Marshall T. Bond, 8718 Linkfair lane, Houston, TX 77025. (713) 668-0029.

****

FOR SALE: 1940'S VINTAGE ZENITH CONSOLE radio and phonograph. Cabinet is in excellent condition. $250.00 — Call (815) 838-5398. 5 p.m. to 10 p.m. c.s.t. Dick Stauss, Rt. 1 Box 399, Lockport, IL 60441.

****

WANTED — CRYSTAL SETS

HOMEBREW CRYSTAL SET. Dial type mounted on nice wooden cabinet. Vernon Kostohryz, 600 Lakeside 3A, Brownsville, TX 78520. (512) 541-5692.

WANTED — EDISON

WANTED FOR EDISON STANDARD phono— model B. 1.) mainspring 2.) decals-trademark and "Edison, 3.) cabinet lid 4.) A. K. breadboard in excellent condition. Carl Hickey, 27404 N. Highway 1, Fort Bragg, CA 95437. (707) 964-0505.

WANTED — GENERAL

1942 MOTOROLA AM PORTABLE RADIO, model #65L12 in excellent working condition. Also wanted: 1920's Holton alto saxophone, having a 5 digit serial # starting with # one or two. Bell diameter must be at least 5" across. Absolutely no smaller. Send photo and complete description to: Saxophone, P.O. Box 773, Wausau, WI 54402.

WANTED: 1946-1948 RCA Victor "Globe-Trotter" portable radios in excellent working condition. Models 66BX & 8BX6. ALSO WANTED: 1920's Holton alto saxophone, having a 5 digit serial #, starting with # 1 or 2. Bell diameter must be at least 5" across. Absolutely no smaller. Send photo & complete description to: Saxophone, P.O. Box 773, Wausau, WI 54401.

SET OF 7 BAND CHANGING PUSHBUTTONS for Zenith Trans-Oceanic (slide rule type dial), manuals or copies for: Waterman 517A pocketscope, Electro-logic V1 (spinning drum type) Digital voltmeter. Peter J. Ben, 222 Parkview Terr., Lincroft, NJ 07738.

GOOD DIALS FOR PHILCO 37-62 (p/n 27-5287), Emerson 565 AM/FM, & Sonora RCU-208; Good cabinet GE A-65, Rider Vols. 20, 21, 23; Richard Brown, 117 Meisel Avenue, Springfield, NJ 07081. (201) 467-9628.

BATTERY TYPE "RADIOLA" that fits into the Brunswick model BR100 radio phonograph unit. Also, any info or literature on same. Dick Roznovsky, Box 480, Richfield, OH 44286.

WANTED. Oscilloscopes of the 30's. Not working ok if complete, inside & out. Also want 1" to 3" CRT's for early scopes. Have many radios, TVs, parts & literature to swap or will buy. John Kendall, P.O. Box 436, Fallston, MD, 21047.

OLD FIDDLES/ VIOLINS, BANJOS OR MANDOLINS, ETC. ANY CONDITION IF REASONABLE PRICE. THE OLDER THE BETTER. ALSO DO REPAIRS ON FIDDLES/ VIOLINS. CALL OR WRITE JAMES BARNES, 7812 TAZEWELL PIKE, CORRYTON, TN 37721.

OLD BROADCAST OPERATOR IN ARIZONA INTERESTED IN OLD RADIO MEMORABILIA; PAPERS, OLD TUBES, NOVELTIES, SMALL RADIOS, AND COMPONENTS OF THE TWENTIES AND THIRTIES. HAVE RADIOLA 25 WITH LOOP, 6A40 ZENITH WAVEMAGNET, PHILCO 32V FARM RADIO, R.C.A. NAVY SHIP RECEIVER, EICO 950 RC BRIDGE, GERMAN RADIOS, WILCOX GAY TAPE AND RECORD PLAYER, BC 348 RECEIVER, SYLVANIA METAL TUBE CABINET, SYLVANIA JACKET, TUBES, CHOKES, METERS, TRANSMITTER COLLINS 32V3, EICO 720, W.E. INTERCOM AND A FEW W.E. TUBES, GONSET COMMUNICATOR IV, GRAY AUDOGRAPH, STENTYPE MACHINE AND QUACK MEDICAL MACHINES. LIKE TO HEAR FROM COLLECTORS... WAYNE FERNYHOUGH, 1632 W. ROVEY AVENUE, PHOENIX, AZ 85015.

GLASS TUNING DIAL FOR MOTOROLA 5T, ZENITH TOMBSTONE, (AKA WALTON'S RADIO), PHILCO 16B, 90, 70 AND ANY OTHER CATHEDRALS OR TOMBSTONES. MIKE BUKOWSKI, 926 CROWNRIDGE DRIVE, COLORADO SPRINGS, CO 80904

WANTED. BROWN BAKELITE KNOB and 199 tube socket from Steinite model 990 seris radios. Ed Clerkin, 1305 San Marcos Ct., San Luis Obispo, CA 93401. (805) 544-3088.

WANTED: A WIRE RECORDER for playing 3 3/4" spools of recording wire. Used navy equipment. Russell Starkey, 855 Eisenhower Avenue, Jasper, IN 47546. Phone (812) 482-1016.

SIDE TUNING KNOB FOR BELMONT 6D111, manual and schematic for measurements model 80 and Heathkit LG-1 signal generators, RIDERS vols. 16-23, and SAMS 1-700. Looking for a book by the title of "Case Histories of Receiver Troubles and their Remedies," published by Rinehart Books in addition to a hard-cover copy of Tyne's "The Saga of the Vacuum Tube." Am also interested in contacting other collectors in Columbus, Ohio area. Brett Gundlach, 276 E. COMO AVE., COLUMBUS, OHIO 43202, HOME 614) 267-0346, WORK (614) 888-9502.

RADIOLA 28 with 104 speaker, Radiola 25, Radiola 20, Norden Hauck Superhet, Leutz Superhet, Pilot Super Wasp, Pilot parts, Crosley parts, Atwater Kent parts and AK breadboard parts, RCA UZ-1320 horn, Radiola RS, Zenith Super VII or VIII, crystal sets, Burns horn, Emmett A. Smith, 2714 Alden Road, Baltimore, MD 21234.

WANTED— CABINETS FOR RADIOLA X, AND FEDERAL 59, DISPLAY SODION TUBE, UNUSUAL HAND KEYS, INFORMATION ON HALLECK-WATSON COMPANY OF PORTLAND, OREGON. PAT STEWART, W7GVC, 1404 RUTH AVE., WALLA WALLA, WA 99362.

WANTED: ZENITH 11 OR 12 BAND "TRANS-OCEANIC" TRANSISTOR, TOSHIBA "GLOBE-TROTTER," SONY "ORBITER" RECEIVERS OR PARTS, ALSO KLH-21 FM ONLY RADIO. BILL WADE, 657 14TH AVENUE, PROSPECT PARK, PA 19076.

WANTED: ENTIRE WORKS for Capehart 500K, also Edison C-1, C-2, Balmoral and Alva, Victor 10-51A, Tom Grattelo, 2818 Central, Alameda, CA 94501.

PEERLESS MODEL 19AR-60 9" DYNAMIC speaker with cabinet in good working condition. H-P model 410C VTVM working. RCA Victor R-35 radio in excellent working condition. Simpson model 1699 milliohmmeter in working condition. Radiola 20 chassis with good audios. Audio transformer for RCA Victor R15 or RCA Radiola 48. Radio Broadcast magazines for 1922 and 1928. Early Canadian Radio magazines such as Canadian Wireless, Radio, etc. Radio News for July, August and October 1919. October 1921, January 1922, August and September 1924. Top prices for good condition magazines. R. A. McNeill, P. O. Box 472, Yorkton, Sask., Canada S3N 2W4 (306) 783-6121.

WANTED: DECANTER BOTTLES, ice bucket, shot and drinking glasses for model 9008-B Porto-Baradio made by Stewart Warner. Clarence MCGinnis, 1507 N. Glenn Street, Morristown, TN 37814.

WANTED: OWNERS OF EARLY ELECTRICAL magazines, MODERN ELECTRICS, ELECTRICIAN & MECHANIC, etc. I will pay for good photocopies of articles on spark gaps, high frequency Tesla & Oudin coil projects, etc. Need information for forthcoming bibliography. Write first to TCBA, RD3 Box 181, Glens Falls, NY 12801.

WANTED: WWII MILITARY Iconoscope TV camera or tube alone. OK if converted to amateur use. Canadian Marconiphone III regen., IV neutragenaflex, VI, VIIA, VIII, IX, XI. Canadian Westinghouse model W55, W55A, W60A, W57. Hammarlund Trans-Oceanic "Two", De Luxe, Hawk. Kresge Z4 Commander, Karas Short Wave Receiver. D'Arcy Brownrigg, P.O. Box 292, Chelsea, Quebec, JOX 1NO, Canada.

WANTED: A. K. MODEL 55, need everything to mate with gear on tuning condenser. Could also use but not so critical speaker or cone for above. Floor cabinet model, need ivory knob, prefer function for FADA mdl. 790. Will buy junk A.K. if it has at least the tuning parts. C. England, 98 Montague, So. Zanesville, OH 43701.

WANTED: COVER FOR A.K. 55 tin box. Also, 4 tube covers for Advance Neutrowound. Will buy junk set. Jerome Schliepp, 831 Old Berlin Road, Rippon, WI 54971.

C-4 TUBE. for Columbia radio model C-80A. SPRING AND PLATE for A.K. speaker model M. Russ Schoen, E 7340 Nietkze Road, Clintonville, WI 54929. (715) 823-6744.

I BUY BATTERY RADIOS and horns from the 20's, if you have one to sell, send me a card with name, model and price. Rick Parrish, 1260 marilyn Drive, Cape Gir., MO 63701.

WANTED: ZENITH OCEANIC 7000, TOSHIBA- GLOBAL, GRUNDIG SATELLITE OR SONY "ORBITER" BATTERY MULTIBAND SET, WADE, 657 14TH AVENUE, PROSPECT PARK, PA 19076.

WANTED: ONE VERY NICE RADIOLA 100 A LOUD SPEAKER, PLEASE WRITE: PAUL O'PATIK, 316 RUTHERFORD AVENUE, FRANKLIN, NJ 07416.

DO YOU HAVE THAT CLASSICAL 78 ALBUM that has a damaged or missing record? I have an "album singles for sale" listing that I will send to anyone for a 25 cent long self-addressed stamped envelope. Anton Johannes, R.D. #3 Box 253, Pine Bush, NY 12566.

WANTED. I BUY RADIO TV collections. Please send description and price desired. John Kendall, P. O. Box 436, Fallston, MD 21047.

WANTED— SCHEMATIC, ETC. ON BLUE RIBBON AND REMINGTON 5 TUBE RADIOS, OR OTHER RADIOS LIKE THE ABOVE. WANT TO GET THEM WORKING WITH ORIGINAL PARTS. W. G. WEAMER, 390 E. FOSTER ROAD, SANTA MARIA, CA 93455.

WANTED "TENSOR ANALYSIS OF NETWORKS" by Kron; Briggs and Stratton crystal set; accessories for "smokerette" radio. Forrest Baker, 1558 W. Garfield, Davenport, IA 52804.

WANTED — HAMMARLUND

HAMMARLUND CONDENSERS, MC-100,

MC50, MOD-35FX, NORMAN CRANE, KF7AS, P.O. BOX 12564, TUCSON, AZ 85732. 749-9140.

WANTED — HEADPHONES

NONWORKING OR WORKING HEADPHONES: Advance, Ajax, Allied, Aristocrat, BASCO, Bel-Canto, Benwood-Linze, Berkey, Berstan, Big Three, Blue Streak, Brandes (early model that has "Superior" stamped on wide nickeled band), Branston, Brown, Churry, Clarion, Davis (bakelite), DTW, DECO, Dymac, Eastern, Eisman, Electro Importing, Essex, Ericson, Everytone, Excello, Federal 52-W, Friedlander- Koppler, Gold Stripe, Gold Tone, Gundlach- Manhatten, Hart- Hegeman, Hartford, Harvey-Wells, Haynes- Griffin, Huball, International, Interocean, IWB, Jolley, Keystone, Kilbourne Clark, Kodel, Lark, Litewate, Magnus, Metro, MacKay, Majestic, Miller, More Tone, Murdock Special, Music Master, National, Navy Ordance Supply, Ohio, Orator, Penn Headset, Perfectone, Ports, Rasco, Radiocraft, Radiotive, Randolph, Red Head, Royal, Seco, Sears, Spartan, Smelzer, Splitdorf, Sraco, Steinmetz, Sunlight, TBM, Teleradio, Tempest, Trego, Victor, Welbilt, White Beauty, Wireless Specialty, Ben Wolfe. .... Vernon Kostohryz, 600 Lakeside 3A, Brownsville, TX 78520. (512) 541-5692.

WANTED — LEUTZ

WANTED FOR LEUTZ MODEL "C" superhet.: 2 Weston No. 301 voltmeter 0 - 10 volts DC. 2 Weston no. 301 ammeter 0-5 amps. DC. 4 General Radio type 231 A audio transformer. 6 special Leutz I.F. transformers. 1 special E.I.S. (Leutz) oscillator coil. 1 special E.I.S. (Leutz) R.F. coupler coil. John A. Rawlins, Jr., 1920 Stephenson Drive, Mesquite, TX 75149. (214) 285-2313.

WANTED — LITERATURE

INSTRUCTION MANUAL FOR EICO MODEL 950 A RC BRIDGE CONDENSER CHECKER. H. F. BRAMMELL, 24 E. MAPLE, AMERICUS, KS 66835.

"WANTED — Operating/ Instruction Manual for Precision signal generator series E-200 and for Sprague Tel-Ohmike resistor condenser analyzer model TO-3. F. Schmidt, 1185 E. Via Entrada, Tucson, AZ 85718"

WANTED: TESLA SUPPLEMENT from the May 1912 MODERN ELECTRICS. Good photocopy OK. Price of no concern. TCBA, RR6, Box 181, Glens Falls, NY 12801.

WANTED OPERATING MANUAL for Precision Tube and Multi-tester #954 Zerox copy OK. Will pay. John G. McDade, #214, 204 E. Joppa Road, Towson, MD 21204.

WANTED: SCHEMATIC TEL-SWEEP GENERATOR. MODEL TSW-50-1948 VISION LABS, JOHN G. MC DADE, 204 E. JOPPA ROAD, #214, TOWSON. MD 21204.

EVERY DAY MECHANICS, VOL. I, NO. 4, MAY 1916 OR A COPY OF "HOW TO BUILD A TRANS- ATLANTIC WIRELESS RECEIVING SET. K. A. LADD, 5240 44TH AVE. S., MPLS., MN 55417. (612) 722-6786.

LAFAYETTE RADIO CATALOGS - 1960 THRU 1968, PLEASE STATE CONDITION AND PRICE. MR. MICHAEL S. SABODISH, SR., 11 - A MATAWAN AVENUE, CLIFFWOOD, NEW JERSEY 07721.

WANTED: OPERATING MANUAL and tube data sheets for Jackson Dynamic tube tester model 636. Zerox copy O.K. Frank Hoffert, 19605 Chardon Road, Cleveland, OH 44117.

WANTED - INFORMATION AND SCHEMATIC for Blaupunkt Sultan 3D radio. Model number unknown, 5 tube AM/FM/ SW. Write Ray Carifio, N4LTS, 6014 SW 33rd Street, Miami, FL 33155

WANTED: LIBRARY BOUND volumes of QST, CQ, 73 PRE 1960. ALSO GLOBE SCOUT (WRL), MIKE GRIMES, K5MLG, 3805 APPOMATTOX CIRCLE, PLANO, TX 75023.

WANTED: SCHEMATIC FOR SILVERTONE MODEL 7166. TOM JOHNSON, 215 E. 7TH STREET, AMES, IA 50010.

WANTED: SCHEMATIC AND INFO on Eico ST 70 amplifier. Gordon Wilson, 11108 - 50 Avenue, Edmonton, Alberta, Canada T6H 0H9.

WANTED: INSTRUCTIONS FOR PACO MODEL 25 IN-CIRCUIT CAPACITOR TESTER RCA WR-50A SIGNAL GENERATOR CRYSTALINER (CRYSTAL MODULES) GENERATOR, GLENN HARTMAN, 5545 DEEP HOLLOW, FAYETTEVILLE, NC 28311.

WANTED — PARTS, TUBES, ETC.

FIXED DETECTOR GRID RESISTANCE FOR ATWATER KENT MODEL 32 AK PART # 8190, ALSO GRID LEAK RESISTOR, AK PART #8190. ALSO FOUND IN MODELS 20c- 30- 33- 35. C. Hoffman, 824 Gordon Street, Allentown, PA 18102. Phone (215) 434-2536.

REPLACEMENT CONE MATERIAL FOR STROMBERG- CARLSON 601-TRF COMPANION CONE SPEAKER. LAWRENCE DE ROSE, 12 WILLS AVENUE, R.D.#1, STANHOPE, NJ 07874.

MACHINES SCREWS TO HOLD PANEL TO CABINET, RADIOLA III AND IIIA, I NEED TWO DOZEN. ERNEST HECKLER, 1314 N. SPARKMAN, HARTSELLE, AL 35640.

WANTED — BATTERY RADIO CHASSIS AND/OR ANY INFORMATION ON BRUNSWICK RADIOLA PHONOGRAPH, MODEL BR100, PATENT 1923 — DICK ROZNOVSKY, BOX 480, RICHFIELD, OH 44286.

WANTED: CABINET & AUDIO TRANSFORMERS FOR GREBE CR9, ARTHUR HARRISON, 501 ARBOR DRIVE, COLUMBIA, MO 65201. (314) 474-8729.

DIAL TUNING KNOB AND RESET LOCK SCREW FOR A WARDS 62501 TABLE MODEL RADIO, RIDER 10 - 22, H. F. BRAMMELL, 24 E. MAPLE, AMERICUS, KS 66835.

ZENITH DETECTOR COIL NO. S-8436 USED IN CH, 10A1, 10A2, 10B1, 10B2. ATWATER KENT MODEL 60 A.F. TRANSFORMER ASSEMBLY. L49B BALLAST TUBE. 45 RPM SPINDLE FOR B5R C129 CHANGER EV/GAME 436. CABINET FOR PILOT TV 37. 3KP4 CRT. ELECTRONICS MEASUREMENT CORPORATION. MODEL 502 SIGNAL GENERATOR, ASSEMBLY MANUAL OR SCHEMATIC. AUDIO INPUT XFMRS FOR SINGLE PLATE TO P-P GRIDS. ANY JUNKBOX PARTS, LITERATURE. ANY EARLY TWO AND THREE PIECE CAR RADIOS, UNITED MOTORS, B.O.P., ETC. ANY OTHER FACTORY CAR RADIOS FROM 30'S - 40'S. ANY SIGNAL SEEKING TYPE CAR RADIOS, MUST HAVE KNOBS. CAR RADIO KNOBS. — ALVIN HECKARD, RD1, BOX 83, LEWISTOWN, PA 17044.

EARLY OR UNUSUAL TUBES, tube cans, cartons also early light bulbs pre 1900. Please describe with prices wanted to: Bruce Harbeck, 13408 Westwood Lane, Omaha, NE 68144. (402) 333-9013.

HALLDORSON 3 to 1 audio transformer, copper casing. hard rubber panel 10 x 11 x 1/4. Gordon Wilson, 11108 - 50 Avenue, Edmonton, Alberta, Canada, T6H 0H9.

DETECTOR and AUDIO PORTION of GREBE CR2. Also need cabinet for same. NEED FRONT PANEL FOR SCOTT Phantom DELUXE. Larry Steeno, 2728 42nd Street, Two Rivers, WI 54221. (414) 794-7320.

MARCONIPHONE VIII cabinet, also Marconiphone VI chassis, or complete radios cash, or generous trade. Gordon Wilson, 11108 - 50 Avenue, Edmonton, Alberta, Canada, T6H 0H9.

WANTED: EMPTY CABINET for a Philco model 20 cathedral radio. I already have the radio and speaker. Must be in good condition. Joe Beach, 6515 Sunset, Garden City, MI 48135.

WANTED— CABINET AND PARTS FOR A FEDERAL 61. Mike Kibler, 300 Speiter #39, Danville, IL 61832. (217) 267-3703.

WANTED: ONE TUNING DIAL and one coil tap knob for a Crosley model XJ. Jack Emery, Box #84, 5546 Union Street, Lexington, MI 48450.

TUBES: EARLY UV-217, type CA pliotron, DeForest DV-1 and DV-6, adapter for DeForest type T audion to fit candelbra socket. Parts: rheostat assembly and knob for Tuska 224 rcvr.; case w/hardware for Radiola balanced amplifier. B. T. Wooters, W5KSO, 8303 E. Mansfield Avenue, Denver, CO 80237, (303) 770-5314.

WANTED — PHILCO

PHILCO MODEL 20B 1930 "Baby Grand" radios. Original finish, and no chassis changes a must. Must be completely original and in working condition. Will pay top price for a real nice one. All replies will be answered. Write: Ronald G. Burtzos, 915 Crane Drive, Apt. 703, DeKalb, IL 60115.

PHILCO MODEL 90B, working or not. Original speaker from Philco model 20— must be in good shape. Thomas Abell, 1022 S. Edison Ave., South Bend, IN 46619. Phone (219) 234-8405.

CHASSIS ONLY FOR PHILCO cathedral, model 37-61, Charles A. D'Alessio, 136 Changebridge Road, K4, Montville, NJ 07045. ((201) 263-4747.

WANTED — PLASTICS

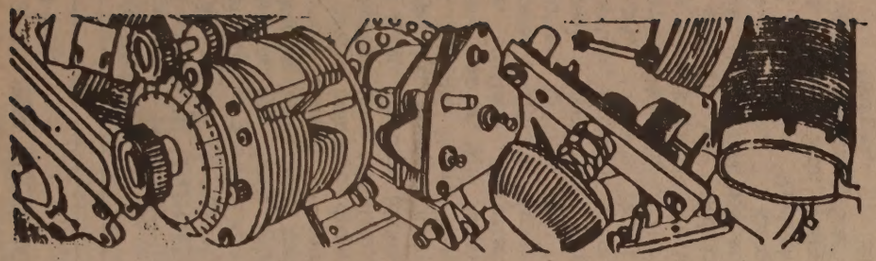
WANTED: CATALIN RADIOS. All makes: FADA, OSWALD, EMERSON, MOTOROLA, etc. Top prices paid. R. Wayne Oliver, 355 Highwood Avenue, Leonia, NJ 07605. (201) 944-0777.

WANTED — SONY

WANTED: OLD SONY radios. Jay Lewin, 400 east 54th Street, New York, NY 10022. (212) 935-5656.

WANTED — ZENITH

ZENITH TRANSISTOR Trans-Oceanic 11 or 12 band radio- parts or complete. Have Rider TV manuals 2 thru 23 for offer. Wade, 657 14th Ave., Prospect Park, PA 19076.



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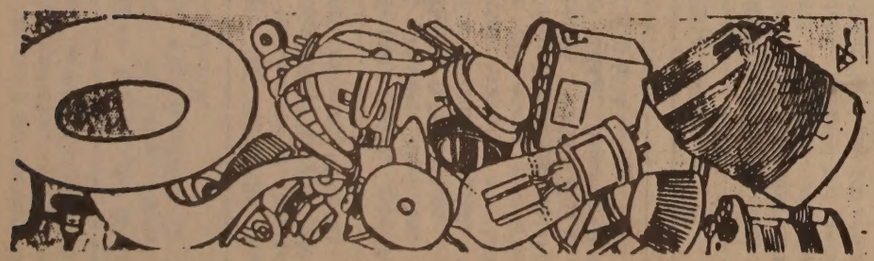
- **VINTAGE RADIO IDENTIFICATION SKETCHBOOKS** by D.H. Moore (See Flyer for details)
- Radios, The Golden Age - Philip Collins

and much, much more. Data Packages for American radios manufactured during the 1920's thru 1950's period plus our special research service for unknown model numbers are available. For free flyer send 2-stamp LSASE to Olde Tyme Radio Co., 2445 Lyttonsville Road, Silver Spring, Md. 20910.

Wish to reach us by phone? the number is (301) 585-8776. Please call between 10:00 AM and 10:00 PM local time.



DECEMBER

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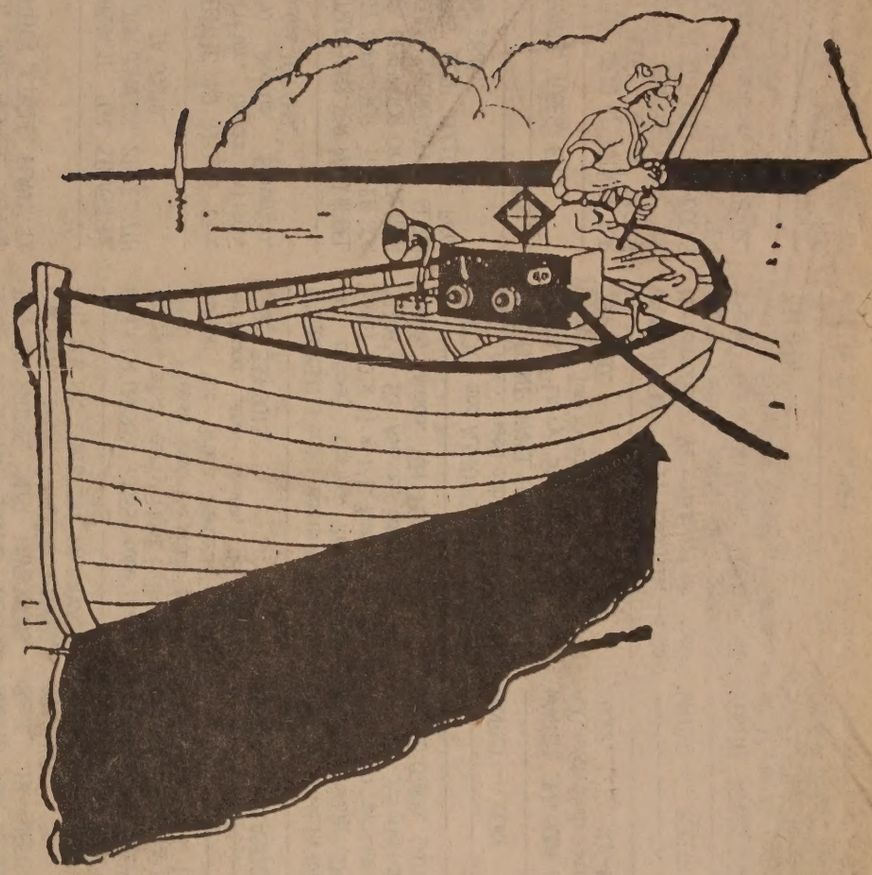

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